REMARKS/ARGUMENTS

Claims 9-21 are pending in the present application. By this Request, claims 9, 10, 12-14, 18, and 20 are amended. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 103, Obviousness, Claims 9-21

The examiner has rejected claims 9-21 under 35 U.S.C. § 103 as being unpatentable over Nelson et al. (U.S. Publication No. 2003/0005092 A1) (hereinafter "*Nelson*") in view of Messinger (U.S. Patent No. 6,425, 007 B1) (hereinafter "*Messinger*"). This rejection is respectfully traversed.

As to claims 9-21, the examiner states:

> Nelson teaches a bus system (Par. 18; reads on this limitation); a communications unit connected to the bus system (Figure 1 and Par. 9; internet connected devices); a memory connected to the bus system, wherein the memory includes a set of instructions (Figure 1 and Par. 19-50; ARP cache and databases).
>
> Nelson, also teaches a processing unit connected to the bus system, wherein the processing unit executes the set of instructions to receive cache data from a set of routers in the data processing system on a periodic basis, wherein the cache data includes an identification of the nodes sending data packets onto the network data processing system (Figure 1 and Par. 18 & Par. 8 & 49-50; ARP cache, ARP *table walk* and periodic searches and periodic collections); identify the nodes on the network data processing system using the cache data from the set of routers (Figure 1 and Par. 18 & Par. 8 & 49-50; ARP cache, ARP *table walk* and periodic searches and periodic collections).
>
> Nelson does not explicitly teach generating a display of the nodes in a graphical view comprising communications paths between the nodes with a graphical indication of network traffic volume using the cache data received on a periodic basis, wherein the graphical view includes network traffic volume and node relationships over time.
>
> However, Messinger discloses generating a display of the nodes in a graphical view comprising communications paths between the nodes with a graphical indication of network traffic volume using the cache data received on a periodic basis, wherein the graphical view includes network traffic volume and node relationships over time (Figures 1-4 and Abstract and Col. 5 lines 61-66; graphically depicting network traffic).
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> Nelson and Messinger are analogous art because they are from the same field of endeavor of network management.
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> At the time of the invention, it could have been obvious for one of ordinary skill in the art, having the teachings of Nelson and Messinger before him or her, to incorporate a the identification of nodes on a network data processing system using cache data from a set of routers (i.e. ARP table walk), as disclosed by Nelson, with a graphical display of the network traffic volume, as disclosed by Messinger.
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> The suggestion for doing so would have been where Nelson et al. (Pub. No.: 200310005092 Al) mentions (Par. 50, lines 14-15) that any of the discovery techniques he discussed could be used in conjunction with other discovery techniques.
>
> Therefore, it would have been obvious to combine Nelson with Messinger to obtain the invention as specified in the instant claim.

Final Office Action dated December 12, 2007, pages 2-4.

The examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). For an invention to be prima facie obvious, the prior art must teach or suggest all claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Independent claim 9, which is representative of independent claims 10 and 18 with regard to similarly recited subject matter, reads as follows:

> 9. A data processing system for identifying nodes in a network data processing system, the data processing system comprising:
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> a bus system;
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> a communications unit connected to the bus system;
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> a memory connected to the bus system, wherein the memory includes a set of instructions; and
>
> a processing unit connected to the bus system, wherein the processing unit executes the set of instructions to receive cache data from a set of routers in the data processing system on a periodic basis, wherein the cache data includes an identification of the nodes sending data packets onto the network data processing system; store the cache data received on a periodic basis prior to clearing the cache data from the set of routers, wherein the stored cache data comprises snapshots of cache data previously present in the set of routers over time; identify the nodes on the network data processing system using the stored cache data from the set of routers; and generate a display of the nodes in a graphical view comprising communications paths between the nodes with a graphical indication of network traffic volume using the stored cache data, wherein the graphical view includes network traffic volume and node relationships over time.

Neither *Messinger* nor *Nelson* teaches or suggests a set of instructions which <u>store the cache data received on a periodic basis prior to clearing the cache data from the set of routers, wherein the stored cache data comprises snapshots of cache data previously present in the set of routers over time</u> as recited in amended claim 9 of the present invention. Claim 9 recites the features of receiving cache data from the routers on a periodic basis. Claim 9 also recites that each time cache data is received (on the periodic basis), this cache data is stored. Claim 9 further recites that after this cache data is stored, the cache is cleared. By receiving cache data periodically, storing this data, and then clearing the cache(s) each time data is received, the stored cache data comprises snapshots of the routers' cache data at various points in time. Additionally, the claim recites that the caches are cleared when cache data is received from the routers. Consequently, when the next cache data is received from the routers at a later point in time (received on the periodic basis), this cache data will comprise new cache data. Thus, the stored cache data in claim 9 includes historical cache data (cache data no longer present in the cache) of the routers.

Messinger does not teach or suggest storing the cache data received on a periodic basis prior to clearing the cache data from the set of routers, wherein the stored cache data comprises snapshots of the

cache data over time, nor does the examiner assert otherwise. Instead, the examiner alleges that the table walk technique in *Nelson* teaches this feature.

The *Nelson* reference is directed to a method for locating and recovering network-connected devices. *Nelson* discloses using discovery techniques to discover devices on the network, acquire identifiers of the discovered devices, store information about the discovered devices, and access a database containing information about devices of interest, such as stolen or missing devices. The identifiers are then compared to the database to identify devices of interest among the discovered devices, trace network addresses of the identified devices of interest, and provide information about the identified devices of interest to a party of interest, such as a law enforcement agency or market research data.

Nelson also does not teach or suggest storing the cache data received on a periodic basis prior to clearing the cache data from the set of routers, wherein the stored cache data comprises snapshots of cache data previously present in the set of routers over time. Instead, *Nelson* discloses a table walk technique in paragraphs 0049-0050, which are reproduced below:

> Another exemplary preferred discovery technique employs a "table walk" (e.g., an ARP Table Walk) whereby identifying information (for devices which have recently communicated with a discovered device) are used recursively to discover additional devices and obtain their identifying information. Each IP-capable node (device) on the Internet 110 maintains a cache (called the ARP cache) which lists all of the nodes that the original node communicates with. The ARP cache also includes the MAC address and IP address for each of the nodes. Devices differ in the length of time they retain this cache, but it is usually measured in minutes.
>
> According to the present invention, an exemplary preferred table walk discovery technique involves recursively talking to a node and asking that node about all of the other nodes that it is aware of. By asking a host for its cache (e.g., via SNMP) and then asking each referenced host for its cache, and so on, a great number of devices can be discovered. This mechanism is very efficient, because broadcast traffic to nonexistent devices is avoided. However, it is less complete than a range walk because it only discovers a group of hosts that are talking to each other on a regular basis. To discover a greater number of hosts, a greater number of starting points are employed to ensure that a large portion of the Internet 110 or other network of interest is covered. Any of the discovery techniques discussed above can be used in conjunction with other discovery techniques. For example, Microsoft Corporation's AutoDiscovery technology uses SNMP or Ping, or searches ARP caches, as a method for discovering devices on an enterprise network, specific networks or IP addresses, or a range of IP addresses.

Nelson, paragraphs 0049-0050.

The table walk technique of *Nelson* disclosed above is a process for looking at each entry in turn. Since ARP caches are flushed on a regular, periodic basis, the information used in the table walk technique of *Nelson* is **current** cache data. Thus, the information in the table walk technique in *Nelson* is perishable, as only current cache data is used in the table walk. In contrast, the presently claimed invention uses stored cache data comprising "snapshots" of cache data previously present in the set of

routers over time. The presently claimed invention takes multiple snapshots of the cache data and stores the data. In addition, the presently claimed invention also flushes the caches each time a cache data snapshot is received from the routers. Thus, the stored cache data in the presently claimed invention comprises historical cache data from the routers, not merely cache data currently present in the router caches. *Nelson* only discloses using current cache data, and does not provide any suggestion or motivation for using stored data which includes data no longer present in the cache in the table walk.

Consequently, as *Nelson* and *Messinger*, either alone or in combination, fail to teach or suggest all of the features of claims 9, 10, and 18, the rejection of claims 9, 10, and 18 has been overcome.

In addition, since claims 11-17 and claim 21 depend from claim 10, and claims 19-20 depend from claim 18, the same distinctions between *Nelson*, *Messinger*, and the claimed invention in claims 11-17 and 19-21 apply for these dependent claims. Furthermore, these dependent claims include additional features not found in the cited reference.

For example, claim 13 recites identifying network traffic on the communication paths using the stored cache data. While the examiner alleges that this feature is taught by the ARP cache and the ARP table walk feature of *Nelson*, as discussed above, *Nelson* does not teach or suggest the stored cache data as recited in the claim 9. Consequently, *Nelson* cannot teach or suggest identifying network traffic on the paths using the stored cache data.

In addition, claim 14 recites wherein the stored cache data received on the periodic basis is used to validate service level agreement compliance. Although the examiner alleges that *Messinger* teaches cache data used to validate service level agreements, the sections cited by the examiner merely discuss how bandwidth and communications information may be useful in determining whether sufficient bandwidth capacity already exists or whether more should be provided. *Messinger* does not teach a service level agreement. As known in the art, a service level agreement comprises a contract between two parties which specifies the level of service (e.g., availability, serviceability, performance, operation, billing, etc.) expected from the service provider, as well as, in some instances, penalties in case the service level agreement is violated. There is no mention in *Messinger* of employing a service level agreement, nor of validating a service level agreement using the stored cache data. In addition, in contrast the presently claimed invention which uses historical cache data to perform a service level agreement validation, *Messinger* does not specify how or where the base data for performing such a validation would come from.

Furthermore, claim 16 recites where the agents clear the set of address resolution protocol caches each time data is sent to the data processing system. In contrast with the router configuration item which is set by the installer and maintainer of the router (the "inherent feature among routers"), claim 16 recites allowing the agents in the router to alter the static configuration setting by being able to flush the cache.

While the static configuration uses a time out merely to rid the cache of stale information, the feature of claim 16 of having agents clear the cache on a controlled or algorithmic basis allows for storing snapshots of cache data in order to view traffic patterns as they emerge over differing time frames, and thereby creating better statistical data.

Therefore, the rejection of claims 9-21 under 35 U.S.C. § 103 has been overcome.

II. Conclusion

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance.

The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

/Cathrine K. Kinslow/

Cathrine K. Kinslow
Reg. No. 51,886
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 385-8777
Attorney for Applicants